

A large, stylized letter 'A' is formed using the characters 'S' and 'Y'. The left and right vertical strokes are composed of 'S' characters, while the central vertical stroke and the diagonal strokes are composed of 'Y' characters. The 'A' is symmetrical and has a bold, blocky appearance.

PPPPPPPP		DDDDDDDD		AAAAAA		TTTTTTTTTT
PPPPPPPP		DDDDDDDD		AAAAAA		TTTTTTTTTT
PP	PP	DD	DD	AA	AA	TT
PP	PP	DD	DD	AA	AA	TT
PP	PP	DD	DD	AA	AA	TT
PP	PP	DD	DD	AA	AA	TT
PPPPPPPP		DD	DD	AA	AA	TT
PPPPPPPP		DD	DD	AA	AA	TT
PP		DD	DD	AAAAAAAAAA		TT
PP		DD	DD	AAAAAAAAAA		TT
PP		DD	DD	AA	AA	TT
PP		DD	DD	AA	AA	TT
PP		DD	DD	AA	AA	TT
PP		DDDDDDDD		AA	AA	TT
PP		DDDDDDDD		AA	AA	TT

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....

LL		IIIIII		SSSSSSSS
LL		IIIIII		SSSSSSSS
LL		II	SS	
LL		II	SS	
LL		II	SS	
LL		II	SS	
LL		II	SSSSSS	
LL		II	SSSSSS	
LL		II		SS
LL		II		SS
LL		II		SS
LL		II		SS
LL		II		SS
LLLLLLLLLL	IIIIII	SSSSSSSS		
LLLLLLLLLL	IIIIII	SSSSSSSS		

(1)	82	DECLARATIONS
(1)	276	STACKS FOR NULL AND SWAPPER PROCESS
(1)	293	NULL PROCESS HEADER AND PCB
(1)	306	SWAPPER PROCESS HEADER AND PCB
(1)	322	SYSTEM PCB
(1)	331	PCB ADDRESS VECTOR


```
0000 1 .TITLE PDAT PROCESS DATA BASE
0000 2 .IDENT 'V04-000'
0000 3 :
0000 4 :*****
0000 5 :*
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0000 23 :*
0000 24 :*
0000 25 :*****
0000 26 :
0000 27 :++
0000 28 : FACILITY: EXECUTIVE, PROCESS DATA BASE
0000 29 :
0000 30 : ABSTRACT: PDAT ALLOCATES AND INITIALIZES THE STORAGE FOR THE
0000 31 : PROCESS DATA BASE, WHICH CONTAINS THE PCB, PHD AND STACK FOR
0000 32 : THE NULL PROCESS AND SWAPPER PROCESS.
0000 33 :
0000 34 : ENVIRONMENT:
0000 35 :
0000 36 :
0000 37 : AUTHOR: RICHARD I. HUSTVEDT , CREATION DATE: 23-NOV-76
0000 38 :
0000 39 : MODIFIED BY:
0000 40 :
0000 41 : V03-007 LJK0288 Lawrence J. Kenah 9-Aug-1984
0000 42 : The AUTHPRI field is located in both the PCB and the PHD.
0000 43 :
0000 44 : V03-006 TMK0001 Todd M. Katz 24-Aug-1983
0000 45 : Create the SWAPPER with a UIC of [1,4].
0000 46 :
0000 47 : V03-005 KFH0001 Ken Henderson 20 May 1983
0000 48 : Set PCB$V_PHDRES for NULL and SWAPPER
0000 49 :
0000 50 : V03-004 CWH1008 CW Hobbs 14-May-1983
0000 51 : Add cell SCH$GW_LOCALNODE to hold the node bits for the
0000 52 : local cluster node.
0000 53 :
0000 54 : V03-003 ACG0319 Andrew C. Goldstein, 22-Mar-1983 21:26
0000 55 : Add resource attribute to UIC in process rights list
0000 56 :
0000 57 : V03-002 ACG0318 Andrew C. Goldstein, 8-Mar-1983 19:50
```


0000 58 :
0000 59 :
0000 60 :
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0000 78 :
0000 79 :
0000 80 :--

Add initial rights lists to null and swapper PCB's

V03-001 CWH1001 CW Hobbs 15-Feb-1983
Add cells for last PID created and width of PIX field of PID
(SCH\$GL_PIXLAST and SCH\$GL_PIXWIDTH).

V02-005 LJK0097 Lawrence J. Kenah 3-Dec-1981
Initialize all priority fields in PCB and PHD for
both swapper and null process.

V02-004 LJK0067 Lawrence J. Kenah 15-Sep-1981
Move kernel stacks for SWAPPER and NULL so that they are
adjacent to FCP data area. This prevents the exception and
bugcheck code from overwriting valuable data when the system
is manually crashed while the null process is executing.

V02-003 SRB0029 Steve Beckhardt 17-Jul-1981
Added code to initialize lock queue header to GENPCB macro

V02-002 KTA0024 Kerbey T. Altmann 30-Jun-1981
Cause SWAPPER to start up with its PCB addr in R4.


```
0000 82      .SBTTL  DECLARATIONS
0000 83
0000 84 :
0000 85 : INCLUDE FILES:
0000 86 :
0000 87      $ARBDEF      ;ACCESS RIGHTS BLOCK DEFINITIONS
0000 88      $DYNDEF      ;DYNAMIC DATA STRUCTURE TYPE DEFINITIONS
0000 89      $PCBDEF      ;PROCESS CONTROL BLOCK DEFINITIONS
0000 90      $PHDDEF      ;PROCESS HEADER DEFINITIONS
0000 91      $SGNDEF GLOBAL ;DEFINE SYSGEN VALUES
0000 92      $STATEDEF    ;DEFINE STATE NUMBERS
0000 93
0000 94 ;***** Temporary ARB definitions until SDL is fixed to expand
0000 95 ;***** substructure names correctly.
0000 96 :
00000020 0000 97 ARB$R_RIGHTSLIST=32
00000030 0000 98 ARB$R_RIGHTSDESC=48
0000 99 ;***** END OF TEMPORARY DEFINITIONS
0000 100
0000 101 :
0000 102 : EXTERNAL SYMBOLS:
0000 103 :
0000 104
0000003F 0000 105 SCH$C_MAXPIX==SGN$C_NPROCS-1      ; MAXIMUM PIX
0000 106
0000 107 :
0000 108 : MACROS:
0000 109 :
0000 110      .LIST  MEB
0000 111      .MACRO PHD      SYM
0000 112      .=PHD...+PHD$'SYM
0000 113      .ENDM  PHD
0000 114
0000 115      .MACRO PCB      SYM
0000 116      .=PCB...+PCB$'SYM
0000 117      .ENDM  PCB
0000 118
0000 119
0000 120 :
0000 121 : MACRO TO GENERATE PCB
0000 122 :
0000 123      .MACRO  GENPCB LBL,UIC=0,PHD,PRIORITY,PID,PNAME
0000 124
0000 125      .ALIGN  QUAD
0000 126 PCB...=.
0000 127 LBL==.
0000 128      .BLKB  PCB$C_LENGTH
0000 129 SAV...=.      ; SAVE FOR CONTINUATION
0000 130
0000 131      PCB  L_SQFL
0000 132      .LONG  :
0000 133      .LONG  :-4
0000 134
0000 135      PCB  W_SIZE
0000 136      .WORD  PCB$C_LENGTH
0000 137
0000 138      PCB  B_TYPE
```



```
0000 139      .BYTE  DYN$C_PCB
0000 140
0000 141      PCB    B_ASTEN
0000 142      .BYTE  ^XOF
0000 143
0000 144      PCB    L_ASTQFL
0000 145      .LONG  :
0000 146      .LONG  :-4
0000 147
0000 148      PCB    L_PHYPCB
0000 149      .LONG  PRD-^X80000000+PHD$L_PCB      ; PHYSICAL PCB ADDRESS
0000 150
0000 151      PCB    L_UIC
0000 152      LU = .
0000 153      .LONG  UIC,1      ; UIC FOR PROCESS, RESOURCE FLAG
0000 154
0000 155      PCB    W_STATE      ; SET STATE TO CURRENT
0000 156      .WORD  SCH$C_CUR      ;
0000 157
0000 158      PCB    L_STS
0000 159      .LONG  <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDRES>
0000 160      ; RESIDENT, NON-SWAPPABLE, HEADER-RESIDENT
0000 161
0000 162      PCB    B_PRI
0000 163      .BYTE  3T-PRIORITY      ; BASE PRIORITY
0000 164
0000 165      PCB    B_AUTHPRI
0000 166      .BYTE  3T-PRIORITY      ; INITIAL BASE PRIORITY
0000 167
0000 168      PCB    B_PRI
0000 169      .BYTE  3T-PRIORITY      ; CURRENT PRIORITY
0000 170
0000 171      PCB    B_PRI$AV
0000 172      .BYTE  3T-PRIORITY      ; SAVED BASE PRIORITY
0000 173
0000 174      PCB    B_PRI$AV
0000 175      .BYTE  3T-PRIORITY      ; SAVED CURRENT PRIORITY
0000 176
0000 177      PCB    W_DIOLM
0000 178      .WORD  6      ; ALLOW REASONABLE LIMIT
0000 179
0000 180      PCB    W_DIOCNT
0000 181      .WORD  6      ; ALLOW DIO
0000 182
0000 183      PCB    L_PID
0000 184      .LONG  PID+<1@16>      ; PROCESS ID
0000 185
0000 186      PCB    L_PHD
0000 187      .LONG  PRD      ; PROCESS HEADER
0000 188
0000 189      PCB    Q_PRIV
0000 190      ARB = .
0000 191      .LONG  -1,-1      ; PROCESS PRIVILEGES
0000 192      ; ALL PRIVILEGES
0000 193      PCB    L_ARB
0000 194      .LONG  ARB      ; ACCESS RIGHTS BLOCK
0000 195
```



```
0000 196 PCB Q_PRIV+ARB$R_RIGHTSDESC ; LOCAL RIGHTS DESCRIPTOR
0000 197 LR = .
0000 198 .LONG ARB$$_LOCALRIGHTS,LU
0000 199
0000 200 PCB Q_PRIV+ARB$R_RIGHTSLIST ; PROCESS RIGHTS LIST
0000 201 .LONG LR ; LOCAL RIGHTS LIST
0000 202 .LONG EXE$GQ_RIGHTSLIST ; SYSTEM RIGHTS LIST
0000 203
0000 204 PCB T_LNAME ; PROCESS NAME
0000 205 .NCHR NCHAR,<PNAME> ; COUNT FOR NAME
0000 206 .BYTE NCHAR
0000 207 .ASCII \PNAME\
0000 208
0000 209 PCB L_LOCKQFL ; LOCK QUEUE HEADER
0000 210 .LONG
0000 211 .LONG -4
0000 212
0000 213 .=SAV... ; POSITION TO END OF PCB
0000 214
0000 215 .ENDM GENPCB ;
0000 216
0000 217 :
0000 218 : MACRO TO GENERATE PROCESS HEADER
0000 219 :
0000 220 .MACRO GENPHD LBL,KSP=0,PC=0,POBR=<^X80000000>,POLR=0,R4=0,PRIORITY=0
0000 221
0000 222 .ALIGN QUAD
0000 223 PHD...=.
0000 224 LBL=.
0000 225 .BLKB PHD$C_LENGTH ; DEFINE LABEL
0000 226 SAV...=. ; GENERATE SPACE
0000 227 ; SAVE FOR CONTINUATION
0000 228 PHD L_R4 ; INITIAL R4 CONTENTS
0000 229 .LONG R4
0000 230
0000 231 PHD L_PC
0000 232 .LONG PC ; PROGRAM COUNTER
0000 233
0000 234 PHD Q_PRIVMSK
0000 235 .LONG -T,-1 ; ALLOW EVERYTHING
0000 236
0000 237 PHD L_POLRASTL
0000 238 .LONG POLR ; P0 LENGTH REGISTER
0000 239
0000 240 PHD L_POBR
0000 241 .LONG POBR ; P0 BASE REGISTER
0000 242
0000 243 PHD L_P1BR
0000 244 .LONG ^X7F802000 ; P1 BASE REGISTER
0000 245
0000 246 PHD L_P1LR
0000 247 .LONG ^X200000 ; P1 LENGTH REGISTER
0000 248
0000 249 PHD L_KSP
0000 250 .LONG KSP ; KERNEL STACK POINTER
0000 251 PHD B_ASTLVL
0000 252 .BYTE 4 ; NO PENDING AST'S
```



```

0000 253
0000 254      PHD      L_FREP1VA      ; FIRST AVAIL P1 VA
0000 255      .LONG    ^X7FFFFFFE00 ; ALL FREE
0000 256
0000 257      PHD      W_PHVINDEK    ; BALANCE SLOT INDEX
0000 258      .WORD    -T             ; MAKE PAGE FAULTS ILLEGAL
0000 259
0000 260      PHD      B_AUTHPRI
0000 261      .BYTE    3T-PRIORITY   ; BASE PRIORITY
0000 262
0000 263      . = SAV...              ; POSITION TO END OF PHD
0000 264
0000 265      .ENDM    GENPHD         ;
0000 266
0000 267      ; EQUATED SYMBOLS
0000 268
00000010 0000 269      SWAP_EXT_PRIO = 16
00000010 0000 270      SYS_EXT_PRIO  = 16
00000000 0000 271      NULC_EXT_PRIO = 0
0000 272
00010004 0000 273      SWAP_UIC = ^X00010004
0000 274

```



```

0000 276 .SBTTL STACKS FOR NULL AND SWAPPER PROCESS
0000 277 :
0000 278 : PROCESS STACKS (KERNEL MODE)
0000 279 :
00000000 280 .PSECT $$$000_STACKS,QUAD
00000080 0000 281
00000080 0000 282 .BLKL 32 ; SHORT STACK FOR NULL PROCESS
00000080 0080 283 NULKSP: ;
00000080 0080 284
000000A0 0080 285 SWP$K_KSTKSZ==160 ; SIZE OF SWAPPER STACK
00000300 0080 286 .BLKL SWP$K_KSTKSZ ; LONGER STACK FOR SWAPPER
0300 287 SWPKSP: ;
0300 288 SWP$A_KSTK:: ; EXTERNAL NAME FOR SWAPPER STACK
0300 289
00000000 290
00000000 291 .PSECT $$$230,QUAD

```



```

0000 293 .SBTTL NULL PROCESS HEADER AND PCB
0000 294 :
0000 295 :
0000 296 :
0000 297 :
0000017C 0000 GENPHD NULPHD,KSP=NULKSP,PC=EXESNULLPROC,PRIORITY=NULL_EXT_Prio
00000098 017C .BLKB PHD$C_LENGTH ; GENERATE SPACE
00000000 0098 .=PHD...+PHD$C_R4
000000C0 009C .LONG 0
00000000 00C0 .=PHD...+PHD$C_PC
00000000 00C4 .LONG EXESNULLPROC ; PROGRAM COUNTER
FFFFFFFF 0000 .=PHD...+PHD$C_PRIVMSK
000000CC 0008 .LONG -1,-1 ; ALLOW EVERYTHING
00000000 00CC .=PHD...+PHD$C_POLRASTL
000000C8 00D0 .LONG 0
00000000 00C8 .=PHD...+PHD$C_POBR
000000D0 00CC .LONG ^X80000000
000000D0 00D0 .=PHD...+PHD$C_P1BR
00200000 00D4 .LONG ^X7F802000
00000078 00D8 .LONG ^X200000 ; P1 LENGTH REGISTER
00000080 0078 .=PHD...+PHD$C_KSP
000000CF 007C .LONG NULKSP ; KERNEL STACK POINTER
00000004 00CF .=PHD...+PHD$C_ASTLVL
00000030 00D0 .BYTE 4 ; NO PENDING AST'S
000000E0 0030 .=PHD...+PHD$C_FREPIVA
00000042 0034 .LONG ^X7FFFFFFC0 ; ALL FREE
000000FF 0042 .=PHD...+PHD$C_PHVINDE
0000010C 0044 .WORD -1 ; MAKE PAGE FAULTS ILLEGAL
000001F 010C .=PHD...+PHD$C_AUTHPRI
0000017C 010D .BYTE 31-NULC_EXT_Prio ; BASE NULL_EXT_Prio
0000017C 010D .=SAV... ; POSITION TO END OF PHD
017C 298 :
017C 299 :
017C 300 :
017C 301 :
017C 302 :
017C 303 :
000002A0 0180 PROCESS CONTROL BLOCK FOR NULL PROCESS
00000180 02A0 GENPCB SCH$GL_NULLPCB,PHD=NULPHD,PID=NULPIX,-
00000180 0180 .ALIGN QUAD PRIORITY=NULL_EXT_Prio,PNAME=NULL
00000180 0184 .BLKB PCB$C_LENGTH
00000120 0188 .=PCB...+PCB$C_SQFL
00000180 0184 .LONG -4
00000180 0188 .WORD PCB$C_LENGTH
00000180 018A .BYTE DYN$C_PCB
0000018D 018B .=PCB...+PCB$C_ASTEN
0000018D 018D .BYTE ^XOF
00000190 018E .=PCB...+PCB$C_ASTQFL
00000190 0190 .LONG -4
00000190 0194 .LONG -4
00000190 0198 .LONG NULPHD-^X80000000+PHD$C_PCB ; PHYSICAL PCB ADDRESS
0000023C 019C .=PCB...+PCB$C_UIC
00000001 00000000 023C .LONG 0,1 ; 0 FOR PROCESS, RESOURCE FLAG
000001AC 0244 .=PCB...+PCB$C_STATE
000001AC 01AC .WORD SCH$C_CUR ;
000001A4 01AE .=PCB...+PCB$C_STS
00040011 01A4 .LONG <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDRES>
000001AF 01AB .=PCB...+PCB$C_PRI
000001F 01AF .BYTE 31-NULC_EXT_Prio ; BASE NULL_EXT_Prio

```



```

000001AB 01B0      .=PCB...+PCBSB_AUTHPRI
      1F 01AB      .BYTE 31-NULC_EXT_Prio      ; INITIAL BASE NULL_EXT_Prio
0000018B 01AC      .=PCB...+PCBSB_Pri
      1F 018B      .BYTE 31-NULC_EXT_Prio      ; CURRENT NULL_EXT_Prio
000001A9 018C      .=PCB...+PCBSB_PriBSAV
      1F 01A9      .BYTE 31-NULC_EXT_Prio      ; SAVED BASE NULL_EXT_Prio
000001A8 01AA      .=PCB...+PCBSB_PriSAV
      1F 01A8      .BYTE 31-NULC_EXT_Prio      ; SAVED CURRENT NULL_EXT_Pri
000001C0 01A9      .=PCB...+PCBSW_DIOLM
      0006 01C0      .WORD 6                      ; ALLOW REASONABLE LIMIT
000001BE 01C2      .=PCB...+PCBSW_DIOCNT
      0006 01BE      .WORD 6
000001E0 01C0      .=PCB...+PCBSL_PID
00010000' 01E0      .LONG NULPIX<1@16>          ; PROCESS ID
000001EC 01E4      .=PCB...+PCBSL_PHD
00000000' 01EC      .LONG NULPHD              ; PROCESS HEADER
00000204 01F0      .=PCB...+PCBSQ_PRIV
FFFFFFFF FFFFFFFF' 0204      .LONG -1,-1          ; ALL PRIVILEGES
00000204' 020C      .LONG ARB
00000234 0210      .=PCB...+PCBSQ_PRIV+ARB$R_RIGHTSDESC
0000023C' 0234      .LONG ARB$S_LOCALRIGHTS,LU
00000224 023C      .=PCB...+PCBSQ_PRIV+ARB$R_RIGHTSLIST
00000234' 0224      .LONG LR                      ; LOCAL RIGHTS LIST
00000000' 0228      .LONG EXESGQ_RIGHTSLIST      ; SYSTEM RIGHTS LIST
000001F0 022C      .=PCB...+PCBST_LNAME
      04 01F0      .BYTE NCHAR
4C 4C 55 4E 01F1    .ASCII \NULL\
00000284 01F5      .=PCB...+PCBSL_LOCKQFL
00000284' 0284      .LONG .
00000284' 0288      .LONG .-4
000002A0 028C      .LONG .-4
000002A0 02A0      .LONG .-4
304      .=SAV...

```

; POSITION TO END OF PCB


```

0000041C 02A0 306 .SBTTL SWAPPER PROCESS HEADER AND PCB
00000338 02A0 307 :
00000420 02A0 308 :
00000360 02A0 309 :
00000000 02A0 310 :
000002A0 02A0 311 :
FFFFFFFF 02A0 312 :
0000041C 02A0 .BLKB PHD$C_LENGTH ; GENERATE SPACE
00000338 041C .=PHD...+PHD$C_R4
00000420 0338 .LONG SCH$GL_SWPPCB
00000360 033C .=PHD...+PHD$C_PC
00000000 0360 .LONG EXE$SWAPINIT ; PROGRAM COUNTER
000002A0 0364 .=PHD...+PHD$Q_PRIVMSK
FFFFFFFF 02A0 .LONG -1,-1 ; ALLOW EVERYTHING
0000036C 02A8 .=PHD...+PHD$C_POLRASTL
00000000 036C .LONG 0
00000368 0370 .=PHD...+PHD$C_POBR
00000000 0368 .LONG 0
00000370 036C .=PHD...+PHD$C_P1BR
7F802000 0370 .LONG ^X7F802000
00200000 0374 .LONG ^X200000 ; P1 LENGTH REGISTER
00000318 0378 .=PHD...+PHD$C_KSP
00000300 0318 .LONG SWPKSP ; KERNEL STACK POINTER
0000036F 031C .=PHD...+PHD$B_ASTLVL
04 036F .BYTE 4 ; NO PENDING AST'S
000002D0 0370 .=PHD...+PHD$C_FREP1VA
7FFFFFFE00 02D0 .LONG ^X7FFFFFFE00 ; ALL FREE
000002E2 02D4 .=PHD...+PHD$W_PHVINDE
FFFF 02E2 .WORD -1 ; MAKE PAGE FAULTS ILLEGAL
000003AC 02E4 .=PHD...+PHD$B_AUTHPRI
OF 03AC .BYTE 31-SWAP_EXT_PRIO ; BASE SWAP EXT_PRIO
0000041C 03AD .=SAV... ; POSITION TO END OF PHD
041C 313 :
041C 314 :
041C 315 :
041C 316 :
041C 317 :
041C 318 :
00000540 0420 .ALIGN QUAD
00000420 0540 .BLKB PCB$C_LENGTH
00000420 0420 .=PCB...+PCB$C_SQFL
00000420 0424 .LONG -4
0120 0428 .WORD PCB$C_LENGTH
0C 042A .BYTE DYN$C_PCB
0000042D 042B .=PCB...+PCB$B_ASTEN
OF 042D .BYTE ^XOF
00000430 042E .=PCB...+PCB$C_ASTQFL
00000430 0430 .LONG -4
00000430 0434 .LONG SWPPHD-^X80000000+PHD$C_PCB ; PHYSICAL PCB ADDRESS
80000318 0438 .=PCB...+PCB$C_UIC
000004DC 043C .LONG SWAP_UIC,1 ; SWAP_UIC FOR PROCESS, RESO
00000001 00010004 04DC .=PCB...+PCB$W_STATE
0000044C 04E4 .WORD SCH$C_CUR ;
000E 044C .=PCB...+PCB$C_STS
00000444 044E .LONG <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDRES>
00040011 0444

```



```
0000044F 0448      .PCB...+PCBSB PRI0
                   OF 044F      .BYTE 31-SWAP_EXT PRI0      ; BASE SWAP_EXT_PRI0
0000044B 0450      .PCB...+PCBSB AUTHPRI
                   OF 044B      .BYTE 31-SWAP_EXT PRI0      ; INITIAL BASE SWAP_EXT_PRI0
0000042B 044C      .PCB...+PCBSB PRI
                   OF 042B      .BYTE 31-SWAP_EXT PRI0      ; CURRENT SWAP_EXT_PRI0
00000449 042C      .PCB...+PCBSB PRI0SAV
                   OF 0449      .BYTE 31-SWAP_EXT PRI0      ; SAVED BASE SWAP_EXT_PRI0
00000448 044A      .PCB...+PCBSB PRI0SAV
                   OF 0448      .BYTE 31-SWAP_EXT PRI0      ; SAVED CURRENT SWAP_EXT_PRI0
00000460 0449      .PCB...+PCBSW_DIO0M
                   0006 0460      .WORD 6      ; ALLOW REASONABLE LIMIT
0000045E 0462      .PCB...+PCBSW_DIOCNT
                   0006 045E      .WORD 6
00000480 0460      .PCB...+PCBSL_PID
00010001' 0480      .LONG SCH$C SWPPIX+<1@16>      ; PROCESS ID
0000048C 0484      .PCB...+PCBSL_PHD
000002A0' 048C      .LONG SWPPHD      ; PROCESS HEADER
000004A4 0490      .PCB...+PCBSQ_PRIV
FFFFFFFF FFFFFFFF 04A4      .LONG -1,-1      ; ALL PRIVILEGES
000004A4' 04AC      .LONG ARB
000004D4 04B0      .PCB...+PCBSQ_PRIV+ARBSR_RIGHTSDESC
000004DC' 00000040 04D4      .LONG ARBSL_LOCALRIGHTS,LU
000004C4 04DC      .PCB...+PCBSQ_PRIV+ARBSR_RIGHTSLIST
000004D4' 04C4      .LONG LR      ; LOCAL RIGHTS LIST
00000000' 04C8      .LONG EXESGQ_RIGHTSLIST      ; SYSTEM RIGHTS LIST
00000490 04CC      .PCB...+PCBST_LNAME
                   07 0490      .BYTE NCHAR
52 45 50 50 41 57 53 0491      .ASCII \SWAPPER\
00000524 0498      .PCB...+PCBSL_LOCKQFL
00000524' 0524      .LONG .
00000524' 0528      .LONG .-4
00000540 052C      .PCB...+PCBSL_LOCKQFL
                   0540      .LONG .-4
00000480 0540      .PCB...+PCBSL_LOCKQFL
                   319 .SAV...      ; POSITION TO END OF PCB
                   320 SCH$GL_SWPPID==SCH$GL_SWPPCB+PCBSL_PID      ; ADDRESS OF SWAPPER PID
```



```

00000660 0540 322 .SBTTL SYSTEM PCB
00000540 0540 323 :
00000540 0540 324 :
00000540 0540 325 :
00000540 0540 326 :
00000540 0540 327 :
00000540 0540 328 :
00000660 0540
00000540 0660
00000540 0540
00000540 0544
0120 0548
0C 054A
0000054D 054B
0F 054D
00000550 054E
00000550 0550
00000550 0554
80000078 0558
000005FC 055C
00000001 00000000 05FC
0000056C 0604
000E 056C
00000564 056E
00040011 0564
0000056F 0568
0F 056F
0000056B 0570
0F 056B
0000054B 056C
0F 054B
00000569 054C
0F 0569
00000568 056A
0F 0568
00000580 0569
0006 0580
0000057E 0582
0006 057E
000005A0 0580
00010000 05A0
000005AC 05A4
00000000 05AC
000005C4 05B0
FFFFFFFF FFFFFFFF 05C4
000005C4 05CC
000005F4 05D0
000005FC 00000040 05F4
000005E4 05FC
000005F4 05E4
00000000 05E8
000005B0 05EC
00 05B0
00000644 05B1
00000644 0644
00000644 0648
00000660 064C
.=SAV...

GENPCB MMGSAL SYSPCB,PHD=0,-
PID=0,PRIORITY=SYS_EXT_PRIO
.BLKCB PCB$C_LENGTH
.=PCB...+PCB$C_SQFL
.LONG .-4
.LONG .-4
.WORD PCB$C_LENGTH
.BYTE DYN$C-PCB
.=PCB...+PCB$B_ASTEN
.BYTE ^XOF
.=PCB...+PCB$B_ASTQFL
.LONG .-4
.LONG .-4
.LONG 0-^X80000000+PHD$C_PCB ; PHYSICAL PCB ADDRESS
.=PCB...+PCB$B_UIC
.LONG 0,1 ; 0 FOR PROCESS, RESOURCE FLAG
.=PCB...+PCB$W_STATE
.WORD SCH$C_CUR ;
.=PCB...+PCB$C_STS
.LONG <1@PCB$V_RES>+<1@PCB$V_PSWAPM>+<1@PCB$V_PHDRES>
.=PCB...+PCB$B_PRI
.BYTE 31-SYS_EXT_PRIO ; BASE SYS_EXT_PRIO
.=PCB...+PCB$B_AUTPRIO
.BYTE 31-SYS_EXT_PRIO ; INITIAL BASE SYS_EXT_PRIO
.=PCB...+PCB$B_PRI
.BYTE 31-SYS_EXT_PRIO ; CURRENT SYS_EXT_PRIO
.=PCB...+PCB$B_PRI$SAV
.BYTE 31-SYS_EXT_PRIO ; SAVED BASE SYS_EXT_PRIO
.=PCB...+PCB$B_PRI$SAV
.BYTE 31-SYS_EXT_PRIO ; SAVED CURRENT SYS_EXT_PRIO
.=PCB...+PCB$W_DIOCM
.WORD 6 ; ALLOW REASONABLE LIMIT
.=PCB...+PCB$W_DIOCNT
.WORD 6
.=PCB...+PCB$C_PID
.LONG 0+<1@16> ; PROCESS ID
.=PCB...+PCB$C_PHD
.LONG 0 ; PROCESS HEADER
.=PCB...+PCB$Q_PRIV
.LONG -1,-1 ; ALL PRIVILEGES
.=PCB...+PCB$Q_PRIV+ARB$R_RIGHTSDESC
.LONG ARB$C_LOCALRIGHTS,LU
.=PCB...+PCB$Q_PRIV+ARB$R_RIGHTSLIST
.LONG LR ; LOCAL RIGHTS LIST
.LONG EXE$GQ_RIGHTSLIST ; SYSTEM RIGHTS LIST
.=PCB...+PCB$T_LNAME
.BYTE NCHAR ;
.=PCB...+PCB$C_LOCKQFL
.LONG .-4
.LONG .-4 ; POSITION TO END OF PCB

```


PDAT
V04-000

PROCESS DATA BASE
SYSTEM PCB

0660 329

B 3

16-SEP-1984 00:55:06 VAX/VMS Macro V04-00
5-SEP-1984 03:46:05 [SYS.SRC]PDAT.MAR;1

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```

0660 331 .SBTTL PCB ADDRESS VECTOR
0660 332 :
0660 333 :
0660 334 :
0660 335 :
0660 336 :
0660 337 :
0660 338 :
0660 339 :
0660 340 :
00000000 0660 341 NULPIX=0 ; PIX FOR NULL PROCESS
00000001 0660 342 SCH$C_SWPPIX==1 ; PIX FOR SWAPPER PROCESS
0660 343 :
0660 344 :
0660 345 : VECTOR OF PROCESS CONTROL BLOCK ADDRESSES
0660 346 :
0660 347 : .ALIGN LONG ; LONG WORD ALIGNMENT
0660 348 SCH$GL_PCBVEC:: ; POINTER TO PCB VECTOR
00000000 0660 349 .LONG 0 ;
0664 350 :
0664 351 :
0664 352 : VECTOR OF SEQUENCE NUMBERS FOR PID GENERATION
0664 353 :
0664 354 SCH$GL_SEQVEC:: ; POINTER TO SEQUENCE NUMBER VECTOR
00000000 0664 355 .LONG 0 ;
0668 356 :
0668 357 :
0668 358 : DATA ITEMS FOR PCBVEC REFERENCES
0668 359 :
0668 360 SCH$GL_MAXPIX:: ; MAXIMUM PROCESS INDEX
00000000 0668 361 .LONG 0 ;
066C 362 SCH$GL_PIXLAST:: ; LAST PROCESS INDEX CREATED, USED
00000001 066C 363 .LONG SCH$C_SWPPIX ; IN ROUND ROBIN PID ALLOCATION.
0670 364 : ; INIT TO SCH$C_SWPPIX SO FIRST SEA
0670 365 : ; WILL GET SLOT AFTER SWAPPER
0670 366 :+
0670 367 : *** The next cell contains the width of the index field in the extended (user-
0670 368 : *** visible) PID. While it is possible to find the pcb address with:
0670 369 : ***
0670 370 : *** EXTZV #0, G^SCH$GL_PIXWIDTH, EPID, R0 ; Get index in R0
0670 371 : *** MOVL @G^SCH$GL_PCBVEC[R0], R0 ; R0 now has PCB addr
0670 372 : ***
0670 373 : *** it is much safer to do
0670 374 : ***
0670 375 : *** MOVL EPID, R0 ; Extended PID to R0
0670 376 : *** JSB EXE$EPID_TO_PCB ; Returns PCB addr in R0
0670 377 : ***
0670 378 : *** The format of the PID is likely to change again in future releases. Calling
0670 379 : *** the routine offers a program much greater insurance against problems from
0670 380 : *** future PID changes.
0670 381 : -
00000000 0670 382 SCH$GL_PIXWIDTH:: ; WIDTH OF PROCESS INDEX FIELD IN
0670 383 .LONG 0 ; THE PID, DETERMINED BY SYSGEN
0674 384 : ; MAXPROCESSCNT PARAMETER
0674 385 :
0000 0674 386 SCH$GW_LOCALNODE:: ; ID FOR LOCAL CLUSTER NODE, USED
0674 387 .WORD 0 ; FOR THE NODE FIELD IN THE EPID

```


PDAT
V04-000

PROCESS DATA BASE
PCB ADDRESS VECTOR

D 3

16-SEP-1984 00:55:06 VAX/VMS Macro V04-00
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0000 0676 388
0676 389
0678 390

.WORD 0

; SPARE FOR ALIGNMENT

PDAT
V04-000

PROCESS DATA BASE
PCB ADDRESS VECTOR

0678 392

.END

E 3

16-SEP-1984 00:55:06 VAX/VMS Macro V04-00
5-SEP-1984 03:46:05 [SYS.SRC]PDAT.MAR;1

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PDAT
Symbol table

PROCESS DATA BASE

F 3

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ARB	= 000005C4	R	03
ARBSR_RIGHTSDESC	= 00000030		
ARBSR_RIGHTSLIST	= 00000020		
ARBSR_LOCALRIGHTS	= 00000040		
DYN\$C_PCB	= 0000000C		
EXESG\$ RIGHTSLIST	*****	X	03
EXESNULLPROC	*****	X	03
EXESSWAPINIT	*****	X	03
LR	= 000005F4	R	03
LU	= 000005FC	R	03
MMGSAL_SYSPCB	= 00000540	RG	03
NCHAR	= 00000000		
NULKSP	= 00000080	R	02
NULL_EXT_PRI0	= 00000000		
NULPRD	= 00000000	R	03
NULPIX	= 00000000		
PCBSB_ASTEN	= 0000000D		
PCBSB_AUTHPRI	= 0000002B		
PCBSB_PRI	= 0000000B		
PCBSB_PIRB	= 0000002F		
PCBSB_PIRBSAV	= 00000029		
PCBSB_PIRSAV	= 00000028		
PCBSB_TYPE	= 0000000A		
PCBSL_LENGTH	= 00000120		
PCBSL_ARB	= 0000008C		
PCBSL_ASTQFL	= 00000010		
PCBSL_LOCKQFL	= 00000104		
PCBSL_PHD	= 0000006C		
PCBSL_PHYPCB	= 00000018		
PCBSL_PID	= 00000060		
PCBSL_SQFL	= 00000000		
PCBSL_STS	= 00000024		
PCBSL_UIC	= 000000BC		
PCBSQ_PRIV	= 00000084		
PCBST_LNAME	= 00000070		
PCBSV_PHDRES	= 00000012		
PCBSV_PSWAPM	= 00000004		
PCBSV_RES	= 00000000		
PCBSW_DIOCNT	= 0000003E		
PCBSW_DIOLM	= 00000040		
PCBSW_SIZE	= 00000008		
PCBSW_STATE	= 0000002C		
PCB...	= 00000540	R	03
PHDSB_ASTLVL	= 000000CF		
PHDSB_AUTHPRI	= 0000010C		
PHD\$C_LENGTH	= 0000017C		
PHDSL_FREP1VA	= 00000030		
PHDSL_KSP	= 00000078		
PHDSL_POBR	= 000000C8		
PHDSL_POLRASTL	= 000000CC		
PHDSL_P1BR	= 000000D0		
PHDSL_P1LR	= 000000D4		
PHDSL_PC	= 000000C0		
PHDSL_PCB	= 00000078		
PHDSL_R4	= 00000098		
PHDSQ_PRIVMSK	= 00000000		
PHDSW_PHVINDE	= 00000042		

PHD...	= 000002A0	R	03
SAV...	= 00000660	R	03
SCH\$C_CUR	= 0000000E		
SCH\$C_MAXPIX	= 0000003F	G	
SCH\$C_SWPPIX	= 00000001	G	
SCH\$GL_MAXPIX	= 00000668	RG	03
SCH\$GL_NULLPCB	= 00000180	RG	03
SCH\$GL_PCBVEC	= 00000660	RG	03
SCH\$GL_FIXLAST	= 0000066C	RG	03
SCH\$GL_PIXWIDTH	= 00000670	RG	03
SCH\$GL_SEQVEC	= 00000664	RG	03
SCH\$GL_SWPPCB	= 00000420	RG	03
SCH\$GL_SWPPID	= 00000480	RG	03
SCH\$GW_LOCALNODE	= 00000674	RG	03
SGN\$C_BALSETCNT	= 00000018	G	
SGN\$C_DFWSCNT	= 00000064	G	
SGN\$C_DFWSQUOTA	= 00000078	G	
SGN\$C_GBLSECCNT	= 00000028	G	
SGN\$C_MAXGPGCNT	= 00000800	G	
SGN\$C_MAXPAGCNT	= 00004000	G	
SGN\$C_MAXPGFL	= 00001000	G	
SGN\$C_MAXPSTCNT	= 00000005	G	
SGN\$C_MAXVPGCNT	= 00002000	G	
SGN\$C_MAXWSCNT	= 00000400	G	
SGN\$C_MINWSCNT	= 0000000A	G	
SGN\$C_NPAGEDYN	= 00006800	G	
SGN\$C_NPROCS	= 00000040	G	
SGN\$C_PAGEDYN	= 00004000	G	
SGN\$C_PHYPAGCNT	= 00001000	G	
SGN\$C_SYSDWSCNT	= 00000028	G	
SGN\$C_SYSVECPGS	= 00000005	G	
SGN\$C_SYSWSCNT	= 00000060	G	
SWAP_EXT_PRI0	= 00000010		
SWAP_UIC	= 00010004		
SWPSA_KSTK	= 00000300	RG	02
SWPSK_KSTKSZ	= 000000A0	G	
SWPKSP	= 00000300	R	02
SWPPHD	= 000002A0	R	03
SYS_EXT_PRI0	= 00000010		

PH
VO

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes
-----	-----	-----	-----
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$AB\$\$	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
\$\$\$000_STACKS	00000300 (768.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC QUAD
\$\$\$230	00000678 (1656.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC QUAD

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
-----	-----	-----	-----
Initialization	38	00:00:00.04	00:00:01.93
Command processing	113	00:00:00.52	00:00:03.75
Pass 1	239	00:00:05.87	00:00:20.33
Symbol table sort	0	00:00:00.62	00:00:02.48
Pass 2	118	00:00:01.52	00:00:05.15
Symbol table output	12	00:00:00.09	00:00:00.51
Psect synopsis output	2	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	524	00:00:08.69	00:00:34.18

The working set limit was 1350 pages.
41207 bytes (81 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 479 non-local and 0 local symbols.
392 source lines were read in Pass 1, producing 18 object records in Pass 2.
22 pages of virtual memory were used to define 16 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
-----	-----
_\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	6
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	9

524 GETS were required to define 9 macros.
There were no errors, warnings or information messages.
MACRO/LIS=LIS\$:PDAT/OBJ=OBJ\$:PDAT MSRC\$:PDAT/UPDATE=(ENH\$:PDAT)+EXECML\$/LIB

0379

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